

### **REMARKS**

This response is being entered coincident with a Request for Continued Examination, responds to the Office Action of November 30, 2009, and addresses the comments provided by the Examiner in the Advisory Action dated February 19, 2010.

Claims 27-38 are pending in the present application. By this amendment, Applicants have amended claims 27 and 38, canceled claim 37 and added claims 44-46. No new matter is added.

Claims 27 and 38 are amended to incorporate the claim limitations previously associated with claim 37, which is canceled herein. Additional support for the amendment is provided, for example, at paragraphs [0043] and [0055].

Claim 44 is added to recite a feature of the sample grid spacing. Support for this claim is provided on page 11, paragraph [0058].

Claim 45 is added to provide for automated testing. Support for this feature is provided, *inter alia*, in paragraphs [0029] and [0033].

Claims 46 and 47 are added to individually specify the nature of the incident radiation for claim 38, so as to be consistent with claims 35 and 36. Support for this feature is provided, *inter alia*, in paragraph [0035].

#### **Rejection under 35 U.S.C. § 103(a) – Yamamura *et al.* in view of Duffield, *et al.***

Claims 27-28, 32-33, 35, and 37-38 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yamamura, *et al.* (*International Journal of Pharmaceutics*, 2001) (hereinafter “Yamamura”) in view of Duffield *et al.* (US Patent Application 203/0131905) (hereinafter “Duffield”).

Applicants respectfully traverse the rejection at least in view of the amended claims.

As amended, independent claims 27 and 38 (and their dependent claims) contain a limitation that when X-ray radiation is used, the angle of incidence of less than 2.50 degrees. This is described in the specification (including paragraph [0055]) as important “to allow complete information to be obtained from the sample plugs being analyzed.” The angle of

incidence is significant because, in part, it defines the depth of penetration of the radiation. Paragraph [0043] also provides sufficient scale and range for which the angle of incidence should be, and paragraph [0055] provides a non-limiting example where said angle was two degrees.

Yamamura describes a different set of angles of incidence – characterized as with  $2\theta$  of between  $25-65^\circ$  for the ZnO-ZnS system and between  $5-35^\circ$  in the case of the SA-BA system. The  $0.5^\circ$  figure cited in the Office Action refers to the divergence and scatter slits, not the angle of incidence. Even considering that Yamamura's  $2\theta$  of  $5-35^\circ$  in the case of the SA-BA system may describe an angle of incidence,  $\theta$ , of  $2.5^\circ$ , Yamamura provides no suggestion of benefit or reason to apply lower angles of incidence, such as described in the current invention.

This deficiency in Yamamura is not remedied by Duffield, which makes no mention of spectroscopy or angle of incidences. Accordingly, there is no disclosure or suggestion of all features present in the amended claims, and Applicants respectfully request reconsideration and withdrawal of the rejection.

Moreover, it has not been established that one would have reason or be motivated to combine these references. Duffield has been cited for its disclosure of a coring method which allegedly can be used in combination with the methods of Yamamura, but Duffield does not even describe use of spectroscopy to analyze the powder samples reflected in its disclosure. The sample preparation described *and required for reproducible results* by Yamamura involves the formation of 1.3 cm diameter tablets prepared using compaction pressures in excess of  $1000 \text{ kg/cm}^2$  (Yamamura, pp. 205-206, Section 3.2 “Tableting”). Duffield's samples are only compacted by sufficient force to be held together for the time of *powder* transfer, after which the *powder* is dispersed -- *see, e.g.*, paragraphs [0020] (“*powder* [not pellet] is ejected”) and [0034] (“disrupting the *powder*”) – certainly not compacted at the pressures described in Yamamura. Ede *et al.*, U.S. Patent 7,051,771, which similarly describes the use of dosators to manipulate powders in similar applications as Duffield, describes “Pressures between 1 bar and 10 bar, exerted by the plunger on the powder, are suitable for good compaction of the powder into the pocket.” A pressure of 10 bar corresponds to  $10.2 \text{ kg/cm}^2$ . Neither Yamamura nor Duffield

suggest any reasonable expectation of success in employing samples prepared at pressures of approximately 1% of those described as required for reproducibility.

Moreover, there is nothing in Duffield to suggest that its methodology could be used to prepare samples of sufficient quality for the spectroscopic analyses. There would be no reason for a skilled artisan to combine the references with any expectation of success in the absence of Applicants' disclosure.

For at least this additional reason, Applicants respectfully request reconsideration and withdrawal of the rejection over Yamamura in view of Duffield.

**Rejection under 35 U.S.C. § 103(a) – Yamamura *et al.* in view of Duffield, *et al.* in further view of Vann, *et al.***

Claims 29-30, 34 and 36 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamura in view of Duffield, as applied to claims 27-28, 32-33, 35 and 37-38 above, further in view of Vann *et al.* (US 7,101,510) (hereinafter "Vann").

Applicants respectfully traverse this rejection.

Since claims 29-30, 34 and 36 all depend directly or indirectly on independent claim 27, which Applicants submit is not obvious or anticipated, then these dependent claims are likewise not obvious or anticipated.

Vann does not remedy the deficiencies of Yamamura or Duffield.

For example, contrary to the assertions of the Office Action, Vann does not suggest the use of infrared or other radiation emitter sources for use in scattered radiation spectroscopy. The diode system described in Vann is used to detect the passage of reagent dispensed from any one of the dispensers in the array (Vann, col. 3, lines 15-23). The Examiner has provided no basis for the assertion that one skilled in the art would be motivated to configure such a radiation emitter to work in conjunction with powder X-ray diffraction.

Accordingly, Vann does not cure the deficiencies of the primary cited references and Applicants respectfully request reconsideration of the rejection of claims 29-30, 34 and 36.

**Rejection under 35 U.S.C. § 103(a) – Yamamura *et al.* in view of Duffield, *et al.* in further view of Vann, *et al.*, further in view of Maher *et al.***

Claim 31 stands rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Yamamura in view Duffield, further in view of Vann, as applied to claims 27-30 and 32-38 above, further in view of Maher et al. (US 7,312,043) (hereinafter “Maher”).

Applicants respectfully traverse this rejection.

Since claim 31 depends indirectly on independent claim 27, which Applicants submit is not obvious or anticipated, then these dependent claims are likewise not obvious or anticipated. As described above, neither Yamamura nor Duffield, either alone or in combination, with or without Vann, disclose or suggest all of the elements contained within independent claims 27 and 38, upon which claim 31 depends. Maher does not remedy these deficiencies.

Moreover, Maher discloses instrumentation and methods for manipulating membrane potentials of living cells by electrical stimulation. It does not describe methods for analyzing solids using X-ray or Raman spectroscopy. The absorbance of radiation contemplated by Maher is optical radiation. X-ray radiation is not even considered in this reference, thereby calling into question why one would have reason or motivation to adjust the optical properties of the rack in Duffield-Vann so as to arrive at claim 31 (based on x-ray radiation).

Because Maher does not remedy the deficiencies of the Yamamura – Duffield – Vann references, the Applicants respectfully submit that claim 31 is patentable over this combination of references and request reconsideration and withdrawal of the rejection.

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**PATENT**

**Conclusion**

Applicants believe that the foregoing constitutes a complete and full response to the Office Action of record. Applicants respectfully submit that claims 27-36, 38, and 44-47 are in condition for allowance and entry of the present amendment and notification to that effect is earnestly requested.

Nevertheless, should the Examiner consider that any of these claims are not in condition for allowance, Applicants request that the Examiner call the undersigned attorney at the number listed below to expedite prosecution.

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